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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/660,750	09/12/2003	In-Soo Joo	21C-0309	5986
23413	7590	06/13/2007		
CANTOR COLBURN, LLP 55 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002			EXAMINER CARTER, AARON W	
			ART UNIT 2624	PAPER NUMBER
			MAIL DATE 06/13/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/660,750

Applicant(s)

JOO ET AL.

Examiner

Aaron W. Carter

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11-22 is/are allowed.
- 6) ☒ Claim(s) 1-7, 9 and 10 is/are rejected.
- 7) ☒ Claim(s) 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/29/07 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3, 5-7, 9 and 10 rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,647,133 to Morita et al. ("Morita") in view of US 2004/0071322 to Choshi et al. ("Choshi").

As to claim 1, Morita discloses an image recognition apparatus comprising:

A transparent substrate;

A first recognition section disposed on the transparent substrate (*Fig. 2, element 15 and 15a and column 3, lines 38-51, wherein the prism, element 15, corresponds to the transparent substrate and the inclined surface represented by element 15a corresponds to a first recognition section disposed on the transparent substrate (15) which is used in fingerprint recognition*), the first recognition section receiving an image pattern from an object and generating a first recognition signal corresponding to the received image pattern (*Fig. 2, element 19 and column 3, line 52 – column 4, line 2, wherein the fingerprint pattern corresponds to the image pattern and judging that the fingerprint is a target corresponds to generating a first recognition signal*); and

A second recognition section disposed on the transparent substrate adjacent to the first recognition section (*Fig. 2, elements 15, 21a and 21b and column 4, lines 3-15, wherein the elements 21a and 21b correspond to the second recognition section disposed on the transparent substrate represented by the prism, element 15, which are used for human finger recognition*), the second recognition section having a conductive sensing electrode (*Fig. 2, elements 21a and 21b and column 4, lines 3-15, wherein elements 21a and 21b correspond to a conductive sensing electrode*) connected to a switching element (*column 7, lines 58-67, wherein the processing unit corresponds to the switching element since it, for example, switches the locks on a door or switches the ignition system on and the processing unit is connected to the touch sensor comprising the conductive electrodes 21a and 21b*), and sensing a biological signal from the object measuring an impedance between the object and the conductive sensing electrode so as to

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check whether or not the first recognition signal is obtained from a human being (*column 4, lines 3-15 and column 5, lines 3-48, wherein the impedance detected by the electrodes (21a and 21b) corresponds to a biological signal and is used to check whether or not the fingerprint recognition signal is obtained from a human finger*).

Morita does not disclose expressly measuring a capacitance between the object and the conductive sensing electrode so as to check whether or not the first recognition signal is obtained from a human being.

However, Choshi discloses a first recognition section (*Fig. 17, wherein infrared LED image comparison corresponds to the first recognition section*) and a second recognition section having a conductive sensing electrode (*paragraph 59, wherein the two electrodes correspond to conductive sensing electrode*) connected to a switching element (*Fig. 17 and paragraph 66, wherein when the object is determined to be an organism the LEDs are switched on*) and sensing a biological signal from the object measuring a capacitance between the object and the conductive sensing electrode so as to check whether or not the first recognition signal is obtained from a human being (*Fig. 17 and paragraphs 65 and 66*).

Morita & Choshi are combinable because they are from the same art of image processing, specifically biometric recognition.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to using the process of measuring capacitance between an object and a conductive sensing electrode to check whether or not the object is that of a human being, as taught by Choshi, with the image recognition apparatus disclosed by Morita.

The suggestion/motivation for doing so would have been to provide the advantage of detecting if the object being inspected is that of a living organism (Choshi, paragraph 66).

Therefore, it would have been obvious to combine Morita with Choshi to obtain the invention as specified in claim 1.

As to claim 2, the combination of Morita and Choshi discloses the apparatus of claim 1, wherein the first recognition section is disposed on a center portion of the transparent substrate and the second recognition section is disposed on a peripheral area surrounding the first recognition section (Fig. 2, elements 15, 15a, 21a and 21b, wherein 15a corresponds to the first recognition section and elements 21a and 21b correspond to the second recognition section and as seen in Fig. 2, 15a is disposed in the center portion of the transparent substrate (15) and 21a and 21b are disposed on a peripheral area surrounding 15a).

As to claim 3, the combination of Morita and Choshi discloses the apparatus of claim 2, wherein the first recognition section comprises an image recognition sensor that generates the first recognition signal corresponding to an amount of a reflecting light reflected from the image pattern, the amount of the reflecting light being differently reflected according to a position from which the reflecting light is reflected (Fig. 2 and column 3, lines 31-51, wherein the fingerprint identification processing device, element 24, corresponds to the image recognition sensor and optical beam L sent from the light source (16) to imaging element (18) corresponds to the reflecting light reflected from the image pattern and the amount of light being differently

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reflected according to the fingerprint pattern which corresponds to a position from which the reflecting light is reflected).

As to claim 5, the combination of Morita and Choshi discloses the apparatus of claim 2, wherein the second recognition section comprises:

A first biological-signal recognition section disposed on a first end portion of the transparent substrate, which is adjacent to the first recognition section (Fig. 2 elements 15, 15a, 21a and 21b, wherein the first electrode (21a) corresponds to the first biological-signal recognition section which, as seen in Fig. 2, is disposed on a first end portion of the transparent substrate (15), which is adjacent to the first recognition section (15a)); and

A second biological-signal recognition section disposed on a second end portion of the transparent substrate, which is adjacent to the first recognition section and opposite to the first end portion (Fig. 2 elements 15, 15a, 21a and 21b, wherein the second electrode (21b) corresponds to the second biological-signal recognition section which, as seen in Fig. 2, is disposed on a second end portion of the transparent substrate (15), which is adjacent to the first recognition section (15a) and opposite to the first end portion).

As to claim 6, the combination of Morita and Choshi discloses the apparatus of claim 5, wherein the first and second biological recognition sections comprise a capacitance type biological-signal recognition sensor that acts as a capacitor with the object having the image pattern (column 5, lines 3-13).

As to claim 7, the combination of Morita and Choshi discloses the apparatus of claim 6, wherein the first and second biological-signal recognition sections act as a lower electrode of the capacitor and the object having the image pattern acts as an upper electrode of the capacitor (column 5, lines 3-48).

As to claim 9, the combination of Morita and Choshi discloses the apparatus of claim 1, wherein the image pattern of the object comprises a fingerprint image obtained from the human being (column 3, lines 19-29).

As to claim 10, the combination of Morita and Choshi discloses the apparatus of claim 1, wherein the object directly makes contact with the transparent substrate (Fig. 2, elements 3 and 15, as seen in Fig. 2, the object (3) is in direct contact with the transparent substrate (15)).

5. Claims 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morita and Choshi in view of USPN 5,991,467 to Kamiko.

As to claim 4, the combination of Morita and Choshi discloses the apparatus of claim 3.

The combination of Morita and Choshi does not disclose expressly wherein the image recognition sensor comprises:

A sensing TFT that outputs a voltage signal corresponding to the reflecting light reflected from the image pattern;

A storage capacitor that charges an electron charge corresponding to the voltage signal input from the sensing TFT; and

A switching TFT that outputs a voltage signal corresponding to the electron charge charged into the storage capacitor in response to a switching signal applied from an external.

However, Kamiko discloses an image recognition apparatus comprising:

A transparent substrate (column 4, lines 38-41); and

A first recognition section disposed on the transparent substrate, the first recognition section receiving an image pattern from an object and generating a first recognition signal corresponding to the received image pattern (column 4, lines 16-29 and Fig. 1, elements 59 and 31, as seen in Fig. 1, the entire surface of transparent substrate (59), comprising of protective film (31), correspond to a first recognition section disposed on the transparent substrate, for use in receiving a fingerprint pattern to generate a fingerprint image for fingerprint recognition)

wherein the first recognition section comprises an image recognition sensor that generates the first recognition signal corresponding to an amount of a reflecting light reflected from the image pattern, the amount of the reflecting light being differently reflected according to a position from which the reflecting light is reflected (column 4, lines 30-36, wherein the image sensor corresponds to an image recognition sensor),

wherein the image recognition sensor comprises:

A sensing TFT that outputs a voltage signal corresponding to the reflecting light reflected from the image pattern (column 4, lines 40-63 and column 7, lines 36-40);

A storage capacitor that charges an electron charge corresponding to the voltage signal input from the sensing TFT (column 7, lines 41-45 and column 8, lines 27-36); and

A switching TFT that outputs a voltage signal corresponding to the electron charge charged into the storage capacitor in response to a switching signal applied from an external (column 7, lines 41-45 and column 8, lines 59-62).

Morita, Choshi & Kamiko are combinable because they are from the same art of image processing, specifically fingerprint image recognition.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the image sensor comprising the use of a sensing TFT, storage capacitor and switching TFT, as taught by Kamiko, with the image recognition apparatus disclosed by the combination of Morita and Choshi.

The suggestion/motivation for doing so would have been to provide an inexpensive, miniaturized and thin image reading apparatus (Kamiko, column 2, lines 16-19).

Therefore, it would have been obvious to combine Morita and Choshi with Kamiko to obtain the invention as specified in claim 4.

Allowable Subject Matter

6. Claims 11-22 are allowed, as indicated in the previous office action mailed on 12/28/06.
7. Claims 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron W. Carter whose telephone number is (571) 272-7445. The examiner can normally be reached on 8am - 4:30 am (Mon. - Fri.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (571) 272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


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